Roll No. : .....

Total No. of Questions : **11**] [Total No. of Printed Pages : **3**

BPMS–507

M.Sc. (Previous) Examination, 2023

ZOOLOGY

Paper - III

(Molecular Biology, Cytogenetics and Techniques in Biology)

*Time : **3** Hours*] [*Maximum Marks : **75***

Section–A **(Marks : 2 × 10 = 20)**

Note :– Answer all *ten* questions (Answer limit **50** words). Each question carries **2** marks.

Section–B **(Marks : 5 × 5 = 25)**

Note :– Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **5** marks.

Section–C **(Marks : 10 × 3 = 30)**

Note :– Answer any *three* questions out of five (Answer limit **500** words). Each question carries **10** marks.

Section–A

1. Attempt all questions.

   (i) What is Z-DNA ?

   (ii) What is sigma factor ?

(iii) Discuss Holliday junction.

(iv) What is P53 ?

(v) Discuss Heterokaryon.

(vi) What is GISH ?

(vii) What principle is involved in centrifugation ?

(viii) Write the difference between SEM and TEM.

(ix) Write a note on drosophila genome.

(x) Discuss Neanderthal genome.

Section–B

2. Describe the topological structure of *t*-RNA and micro RNA.

Or

Discuss the process and acessory proteins involved in DNA replication.

3. Write a note on DNA repair.

Or

Discuss how mapping and identification of a disease gene be done.

4. Write a note on banding techniques.

Or

Discuss cell fusion.

5. Write a note on ELISA.

Or

Discuss cryo-techniques.

6. Discuss DNA sequence storage and analysis.

Or

Trace the human history through mitochondrial DNA.

Section–C

7. Discuss in detail the mechanism of protein synthesis.

8. Describe cell-cycle.

9. Write an essay on genome organization.

10. Write an account on different types of electrophoretic techniques.

11. Write an essay on molecular evolution.